Modernization Through Spares (MTS)

Continuous Technology Refreshment (CTR)

This material was extracted from a 3-day workshop entitled Modernization Through Spares II (MTS II) provided by the BRTRC Institute for *HQ Army Materiel Command*. This workshop is still being offered by the BRTRC Institute and includes such topics as:

- **Evaluating items for MTS**
- **Tools for item-level MTS**
- **System-level MTS and AMP**
- **MTS in new acquisition strategies**
- **Open systems in MTS**

US Army Military Specs & Stds Reform: MTS Homepage
http://www.amc.army.mil/amc/rda/milspec/mtshome.html

What Is MTS: A Formal Definition

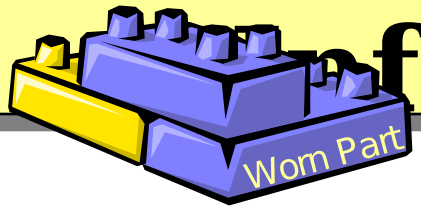
MTS is:

New and Legacy systems

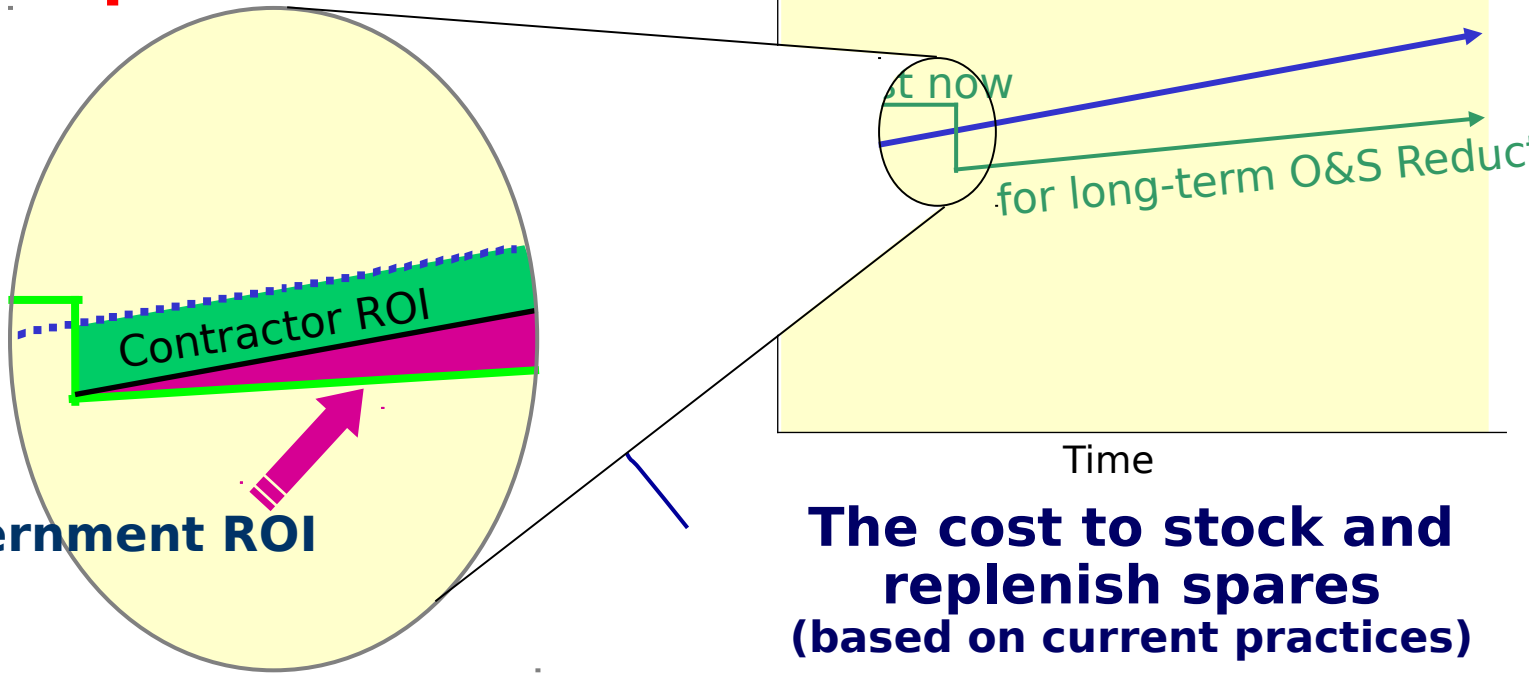
- ✔ A key tool
- ✔ To reduce O&S costs
- ✔ Through spares acquisition
- ✔ A continuum from piece-parts to innovative system maintenance concepts

The MTS Continuum

What Is MTS: An Informal Picture



Buying modern parts and expendables…



The cost to stock and replenish spares
(based on current practices)

The government and contractors can *both* profit

Practical MTS

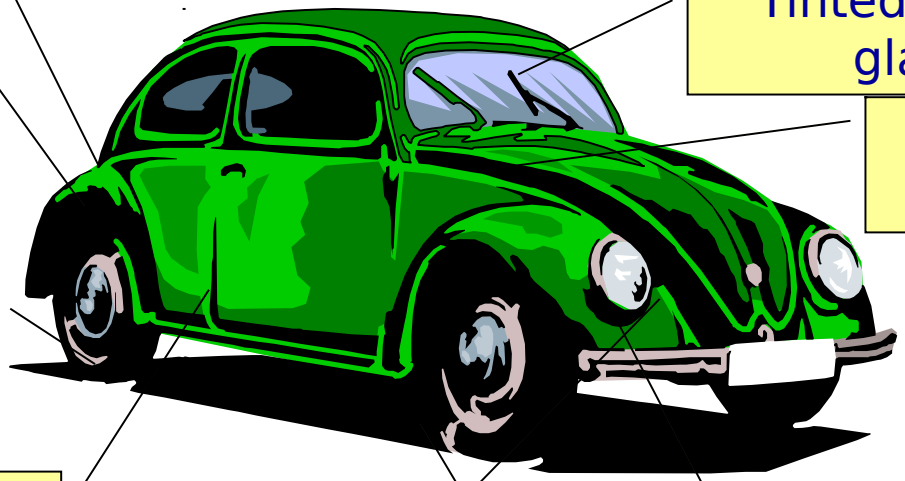
Paper air filters

Improved hose materials

60,000 mile all weather tires

Maintenance free battery

Halogen headlights



Tinted safety glass

AM/FM quad radio-CD

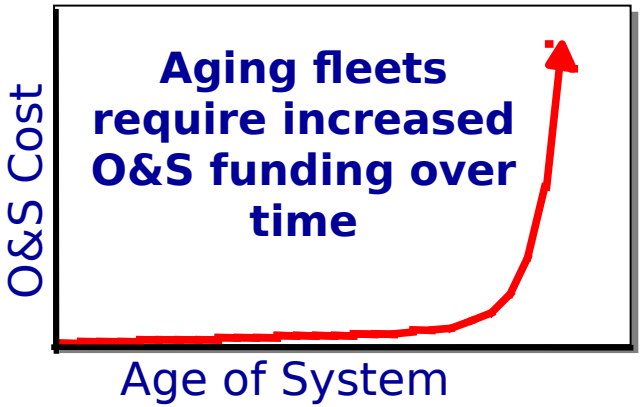
Hi-tech polymer seals

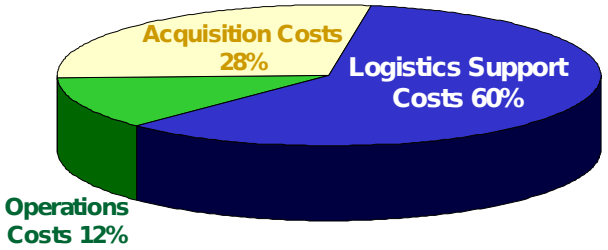
Non-metallic brake shoes

The '72 VW Bug

Why Is MTS Important?

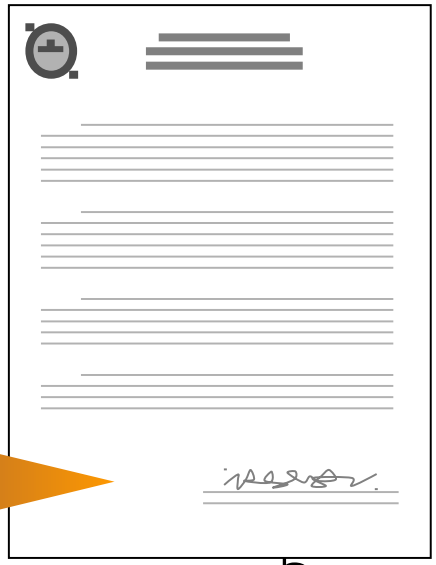
Few New Starts



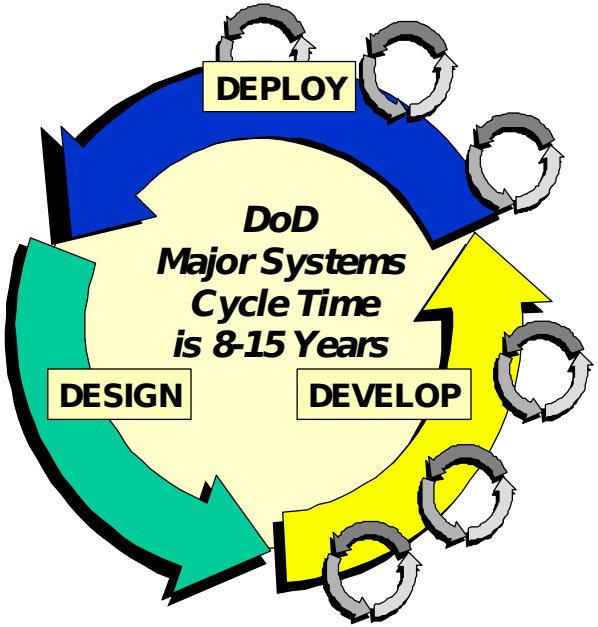


O&S Is Where the Money Is

- **MTS Makes Sense**
  - Best use of scarce resources
  - O&S savings fund new programs
  - Soldiers get the best we can provide
- **MTS is Policy**



Why MTS: Technology Constantly Evolves

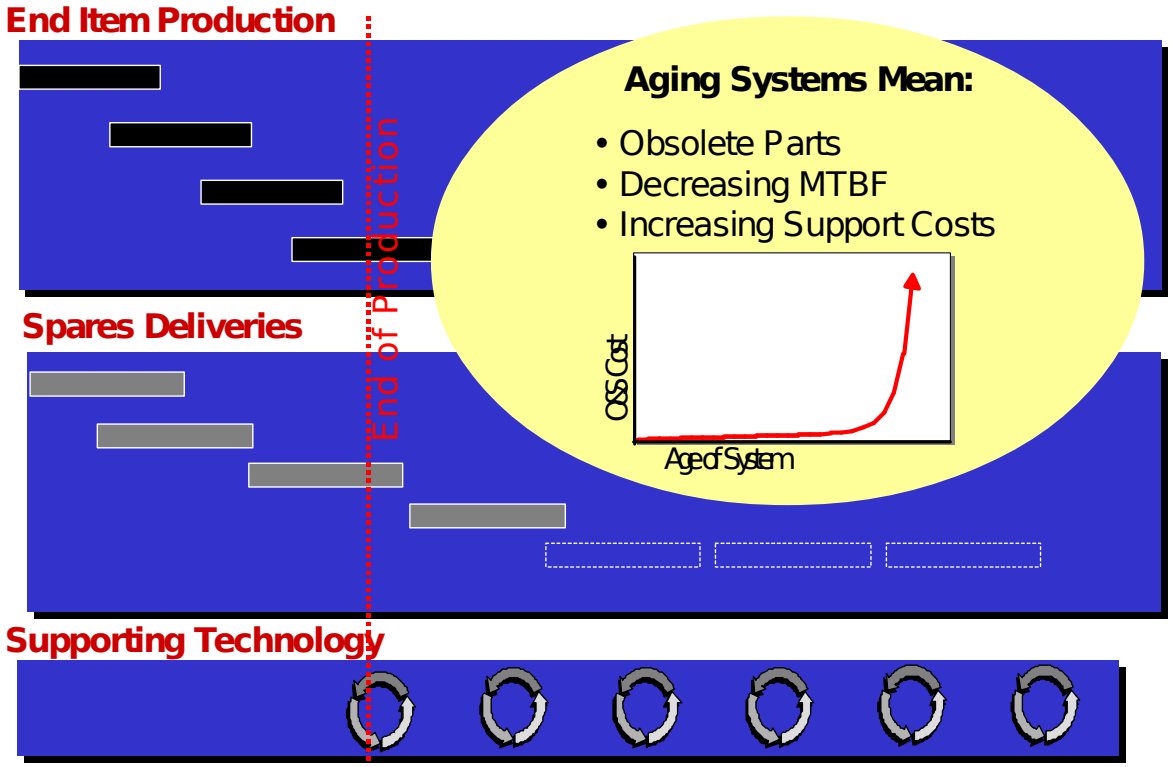


AND

We're keeping systems fielded long past their planned lifespans!

Average Technology Cycle Times:

- ***Electronics - 18 months***
- ***Control Systems - 6 years***
- ***Engines - 14 years***
- ***Structures - 25 years***



Proven MTS Solutions

Bradley TOW Missile Launcher -- Error Detector Card

- ☒ High failure rate
- ☒ High cost item
- ☒ Maintenance driver
- ☒ Obsolete parts
- ☒ Sole source supplier
- ☒ Reprocurement problems
  - Sole source would not bid
  - Limited data rights
  - Limited stocks

RESULTS:

- Combined 23 ICs into 2 chips
- Added adjustment capability and test points
- Improved EMC
- Lowered power consumption
- Improved troubleshooting
- Improved reliability
- Modernized technology
- Multiple sources
- Created new data package

Identify Potential Candidates

High or increasing costs associated with a spare

Annual parts or maintenance expenditures are system cost drivers

Low or decreasing reliability

System operational capability hindered by failures

High cost or effort to maintain TDP currency

Many ECPs, rapid technology turnover drives frequent TDP updates

Diminishing manufacturing sources

Few capable sources willing to produce to requirement

Decision Aids Are Available

Continuous Technology Refreshment (CTR)

- The continuous insertion of improved replacement or spare parts and components as a routine part of depot, intermediate, and field level maintenance
- Fully implemented integrated logistics chain strategies by FY05

New and Improved MTS!

- CTR opportunities are much broader than MTS and include all RM & S initiatives
- MTS is predicated on existing commodity-oriented supply chains rather than supply chains oriented along a weapon system dimension
- In the context of reduction of total ownership, CTR will provide better results

MTS/CTR

- **DCMC Engineering Role:**
  - Review contracts for MTS/CTR candidates
  - Review ECPs for MTS/CTR consideration
  - Ensure contractor policies address MTS/CTR requirements
  - Ensure contractor has an adequate CM system, policies and procedures, and has capability to implement MTS/CTR concepts
  - Ensure the system/product design conforms to MTS/CTR standards